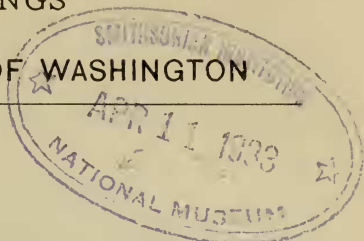


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON



THREE NEW POCKET GOPHERS FROM NEW
MEXICO AND ARIZONA.

BY E. RAYMOND HALL.

In a collection of mammals from Arizona and New Mexico donated to the Museum of Vertebrate Zoology by Miss Annie M. Alexander, and personally obtained and prepared by her and Miss Louise Kellogg during the summer of 1931, are three new races of pocket gophers, Family Geomyidae, representative of the genera *Thomomys* and *Geomys*.

The two forms of *Thomomys* here named as new come from parts of Arizona and New Mexico included within the range formerly assigned to *Thomomys fulvus fulvus*.

From this race, each of the two new forms is distinguished by longer auditory bullae, darker average color, and longer incisors which in *nasutus* are more procumbent. Also, in *nasutus* the rostrum is longer, and in *ruidosae* narrower than in *fulvus*. From *Thomomys fulvus grahamensis*, each of the two new forms may be distinguished by darker color, actually and relatively wider brain case and by the more nearly straight dorsal outline of the skull in longitudinal axis. Selected differences of each of the two new races in comparison with *Thomomys fulvus toltecus* are darker color, markedly lighter skull and smaller size. Outstanding differential characters as between the two new forms themselves are set forth in the diagnoses.

In two recent papers treating of the genus *Thomomys* (Goldman, Journ. Wash. Acad. Sci., vol. 21, no. 17, p. 417, and Hall, Univ. Calif. Publ. Zool., vol. 38, no. 4, p. 325) intergradation has been stated to exist between the *perpallidus* and the *fulvus* groups and between the *perpallidus* group and the *bottae*

group. Accordingly, I have employed the specific name *bottae*, since it is the oldest in the lot.

Color terminology is that of Ridgway's Color Standards and Color Nomenclature, 1912.

***Thomomys bottae nasutus*, new subspecies.**

Type.—Female, adult, skin and skull; no. 50343, Mus. Vert. Zool.; west fork of Black River, 7550 feet altitude, Apache County, Arizona; June 14, 1931; collected by Annie M. Alexander; original no. 892.

Diagnosis.—Size: Medium (see measurements). Color (June-taken specimens): Fuscous above, sides and underparts lighter with wash of ochraceous-tawny on pectoral region; tail grayish; upper sides of toes whitish. Skull: Relatively broad; rostrum long, only slightly depressed distally and not constricted posteriorly; incisors long and strongly procumbent; nasals emarginate posteriorly; pterygoid space V-shaped; auditory bullae long and angular antero-laterally; brain case wide; zygomatic arches widely spreading.

Remarks.—The specimens from Blue which are referred to *nasutus* do not agree in all respects with those from the type locality of *nasutus*. However, the specimens from Blue are much nearer *nasutus* than they are to any other described form. Specimens available from Springerville, which lies only about twenty-five miles north of the type locality of *nasutus*, seem to be referable to *fulvus*.

Specimens examined.—Six from the type locality and five from Blue, 6000 feet, Greenlee County, Arizona.

***Thomomys bottae ruidosae*, new subspecies.**

Type.—Female, adult, skin and skull; no. 50431, Mus. Vert. Zool.; Ruidoso, 6700 feet altitude, Lincoln County, New Mexico; September 30, 1931; collected by Louise Kellogg; original no. 1158.

Diagnosis.—Size: Medium (see measurements). Color (September-taken specimens): Fuscous to fuscous-black above; sides and underparts with strong wash of ochraceous-tawny; tail black except distal third which is white; feet and ankles white. Skull: Relatively broad; rostrum short and narrow, only slightly depressed distally and not constricted posteriorly; incisors of medium length and not strongly procumbent; nasals generally truncate posteriorly; pterygoid space V-shaped; auditory bullae of moderate size and angular antero-laterally; brain case relatively narrow; zygomatic arches widely spreading.

Remarks.—*Thomomys bottae ruidosae* is structurally more similar to *T. b. fulvus* than it is to *T. b. nasutus*. Though known to the writer only from specimens taken at the type locality, perusal of Bailey's (N. Amer. Fauna, no. 39, p. 81) account of *T. b. fulvus* leads one to suspect that specimens from other localities in south-central New Mexico also may be referable to *ruidosae*.

Specimens examined.—Eight from the type locality.

Geomys arenarius brevirostris, new subspecies.

Type.—Female, adult, skull and skin; no. 50460, Mus. Vert. Zool.; east edge of [white] sand [9 mi. W. Tularosa], Tularosa-Hot Springs Road, Otero County, New Mexico; October 10, 1931; collected by Annie M. Alexander; original no. 1174, A. M. A.

Range.—Known from three localities in the Tularosa Basin, Otero County, New Mexico.

Diagnosis.—Size small; coloration dark; rostrum and nasals short (see measurements); temporal ridges parallel or converging anteriorly.

Comparison.—As compared with a series of fifteen topotypes of *Geomys arenarius*, *G. a. brevirostris* averages smaller in every part measured, is slightly darker colored, and has a relatively shorter rostrum which is the most outstanding single differential character. Other cranial differences are as follows: Tympanic bullae more inflated, especially in mastoid portions; temporal ridges parallel or converging anteriorly rather than converging posteriorly; squamosal, just posterior to zygomatic arch, carried farther laterally toward external auditory meatus; interparietal actually and relatively (to length) broader; zygomatic arch more rounded anteriorly; jugal ending less bluntly in maxilla; interpterygoid space averaging wider.

Remarks.—The slightly darker color of *brevirostris* as compared with *arenarius* from the type locality is surprising in view of the fact that *brevirostris* lives in, and along the borders of, the white sand on which lives the nearly white *Perognathus gypsi*. Inasmuch as Merriam (N. Amer. Fauna, no. 8, 1895, p. 140) has recorded specimens of *G. arenarius* from Deming and Las Cruces, which are west of the Tularosa Basin, without comment as to any differential features in comparison with *arenarius* from El Paso, Texas, the type locality, it seems probable that *brevirostris* is limited to the Tularosa Basin, whereas typical *arenarius*, at least to the south and west, occurs in the Rio Grande drainage basin proper.

Specimens examined.—Total number 22, all from Otero County, New Mexico, as follows: Edge of White Sands, 9 miles west of Tularosa on Tularosa-Hot Springs Road, 14; White Sands, 10 miles southwest of Tularosa, 4100 feet, 7; White Sands, 12 miles west of Alamogordo, 4050 feet, 1.

MEASUREMENTS, IN MILLIMETERS, OF *Thomomys* AND *Geomys*

	Total length	Length of tail	Length of hind foot	Basilar length	Length of rostrum ¹	Length of nasals	Zygomatic breadth	Mastoid breadth	Least interorbital breadth	Alveolar length of upper molar series	Breadth of rostrum ²
<i>Thomomys bottae nasutus</i> , 3 ad. ♂♂ topotypes.											
Average	215	54	30.0	35.2	17.3	15.2	26.3	19.9	6.9	7.7	8.2
Maximum	219	58	31.0	35.9	18.0	15.8	26.5	20.4	7.3	7.9	8.7
Minimum	210	50	29.0	34.8	16.5	14.8	26.0	19.4	6.1	7.5	7.5
<i>Thomomys bottae nasutus</i> , 3 ad. ♀♀ topotypes.											
Average	206	52	28.4	32.4	15.9	13.2	23.3	19.3	6.6	7.9	7.5
Maximum	207	56	29.0	32.6	16.2	13.8	23.6	19.6	6.8	8.1	7.6
Minimum	205	48	28.0	32.2	15.2	12.8	22.8	19.1	6.5	7.5	7.4
<i>Thomomys bottae ruidosae</i> , 1 ♂ topotype.											
No. 50428	232	59	30.0	34.7	17.5	15.2	26.0	20.3	6.5	8.8	7.9
<i>Thomomys bottae ruidosae</i> , 7 ad. ♀♀ topotypes.											
Average	204	60	28.8	31.2	14.8	12.6	22.2	17.8	6.3	7.9	7.2
Maximum	223	75	31.0	32.9	15.6	13.8	23.6	18.3	6.7	8.4	7.8
Minimum	192	49	27.0	30.6	14.2	11.4	21.2	16.9	6.1	7.6	6.9
<i>Geomys arenarius brevirostris</i> , 7 ad. ♂♂											
Average	253	79	30.9	35.9	17.9	15.0	25.4	23.9	6.2	7.8	9.5
Maximum	261	84	32.0	36.8	19.0	16.1	27.1	24.9	6.2	8.0	10.0
Minimum	244	74	30.0	34.2	16.8	13.6	23.6	23.0	5.8	7.4	9.2
<i>Geomys arenarius arenarius</i> , 3 ad. ♂♂ topotypes.											
Average	262	85	33.0	37.3	19.6	16.5	26.5	24.8	6.5	8.4	10.2
Maximum	280	95	34.0	38.4	20.4	17.2	27.3	25.9	6.7	8.8	10.6
Minimum	250	74	32.0	35.9	19.2	16.1	25.1	23.1	6.4	8.1	9.7
<i>Geomys arenarius brevirostris</i> , 10 ad. ♀♀											
Average	233	69	29.3	32.4	15.8	13.0	23.3	22.2	6.2	7.4	9.0
Maximum	247	80	32.0	35.0	17.5	14.6	25.0	23.9	6.5	7.9	9.6
Minimum	221	58	27.0	30.3	14.9	11.8	21.8	20.8	6.0	6.8	8.6
<i>Geomys arenarius arenarius</i> , 10 ad. ♀♀ topotypes.											
Average	243	74	31.5	35.3	18.1	15.4	24.9	23.3	6.5	7.9	9.7
Maximum	250	84	35.0	37.8	19.3	17.0	26.4	24.6	6.8	8.2	10.0
Minimum	225	63	29.0	32.3	16.4	13.9	24.0	22.5	6.1	7.1	9.3

¹Length of rostrum as here given was taken from the middle of the anterior border of the nasals to the maxilla at the lateral end of the base of the lacrymal process.

²Breadth of rostrum as here given is, in *Geomys*, the greatest breadth of the rostrum, and in *Thomomys* it was taken where the maxillae and premaxillae meet on the sides of the rostrum.

—MUSEUM OF VERTEBRATE ZOOLOGY,
UNIVERSITY OF CALIFORNIA, BERKELEY.